

EPSHTEYN, D.A. [author]; ARSEN'YEVA, L.Z. [reviewer].

"Scientific bases of chemical industry." D.A. Epshtein. Reviewed by L.Z.
Arsen'eva. Zhur.prikl.khim. 26 no.9:1002-1003 3 '53. (MLRA 6:10)
(Chemical industries) (Epshtein, D.A.)

KLEVIN, V.A.; POLYAKOV, N.N.; ARSEN'YEV, L.Z.; AYRAMOVA, N.S., redaktor;
SHPAK, Ye.G., tekhnicheskii redaktor

[Technology of nitrogen fertilizers] Tekhnologiya azotnykh udobrenii.
Moskva, Gos. nauchno-tekhn. izd-vo khim. lit-ry, 1956. 286 p.
(Fertilizers and manures) (MLM 10:1)
(Nitrogen)

POZIN, Maks Yefimovich. Principal participants: ARSEN'YEVA, L.Z.; KAGANOVICH, Yu.Ya.; KLEBANOV, G.S.; KLEVKE, V.A.; KOPYLEV, B.A.; SONDLOVSKIY, A.A.; MAKOVETSKIY, L.A., red.; GRIVA, Z.I., red.; ERULIKH, Ye.Ya., tekhn. red.

[Technology of mineral salts; fertilizers, pesticides, industrial salts, oxides and acids] Tekhnologiya mineral'nykh solei; udobreni, pestitsidov, promyshlennykh solei, oksidov i kislot. 2., izd. perer. i dop. pri uchastii: L.Z.Arsen'evoi i dr. Leningrad, Gos. nauchno-tekhn. izd-vo khim. lit-ry, 1961. 1008 p. (MIRA 14:10)
(Fertilizers and manures) (Salts)

KLEVKE, Valentin Al'vinovich; POLYAKOV, Nikolay Nikolayevich;
ARSEN'YEVA, Lyudmila Zakharovna; AVRAMOVA, N.S., red.;
KOCAN, V.V., tekhn. red.

[Technology of nitrogen fertilizers] Tekhnologiya azotnykh
udobrenii. Iss.2., perer., Moskva, Goskhimizdat, 1963. 391 p.
(MIRA 16:6)

(Nitrogen fertilizers)

ARSEN'YEVA, N. A.

SHAPIRO, N. J., ARSEN'YEVA, N. A., and ARNOLDSTROV, S. N.

Mbr., V. M. Molotov Central Scientific Research Institute of X-Rays and
Radiology, -1947-

"Comparative Characteristics of the Mutagenous Action of X-Rays in Different
Kinds of Drosophila," Dok. AN, 5², No. 8, 1947

SO: MLRA

ARSEN'YEVA, M.A.; KEL'GOVSKIY, M.L.; DELONE, N.L.; PETROVA, O.N.; KHVOSTOVA,
V.V.; SHAPIRO, N.I.

Radiation genetics. Itogi nauki. Biol. nauki no. 1: 329-378 '57.
(RADIATION--PHYSIOLOGICAL EFFECT) (GENETICS) (MIRA 11:3)

21(3)

AUTHORS: Tinyakov, G. G., Arsen'yev, V. A.

SCV/25-122-4-13/57

TITLE: The Peculiarities of the Effect of an Ionizing Radiation Upon the Nuclear Apparatus of Sexual Cells of Ape Males (Osobennosti vozdeystviya ioniziruyushchey radiatsii na yadernyy apparat polovykh kletok samtsov obes'yan)

PERIODICAL: Doklady Akademii nauk SSSR, 1950, Vol 122, Nr ., pp 589-592 (USSR)

ABSTRACT: This paper gives the results of the cytological investigation of the spermatogenesis in apes which were totally irradiated by X-rays (150 - 500 r). These investigations were carried out in the Sukhumskaya mediko-biologicheskaya stantsiya ANU SSSR (Sukhumi Medical Biological Station, Academy of Medical Sciences USSR). The authors investigated 7 testicles of ordinary apes used for test-purposes Macaca mulatta (Rhesus) aged from 4 to 7 years, and 6 testicles of 2 - 9 years old animals which had been irradiated by X-rays. The conditions of the irradiation and the processing of the preparations are discussed in a few lines. The whole experiment was, in essential, connected with the investigation of the spermatogonium fissure

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SOV/26-122-4-13/57
The Peculiarities of the Effect of an Ionizing Radiation Upon the Nuclear Apparatus of Sexual Cells of Ape Males

in order to find the composition of the chromosome complex of *Macaca mulatta* and also with the investigation of the dividing of the 1st order spermatocytes in order to determine the character of the chromosome reorganizations caused by an ionized radiation. In the testicles of the test animals no chromosome bridges were found. However, in the spermatic cords of the irradiated apes various cell injuries were found. The injuries connected with the disturbance of the structure of the individual chromosomes are especially interesting. The applied doses cause a noticeable quantity of chromosome disturbances. The chromosome reorganizations which were found in the individual testicle cells at various times after the irradiation prove the existence of a protracted and continuous destruction of the nuclear apparatus caused by a single irradiation by X-rays. According to the results of this paper, a part of the chromosome structure variations may last for life and cause new chromosome injuries. In the testicles of men similar injuries may be caused by an ionizing radiation. There are 3 figures, 1 table, and 3 references, 1 of which is Soviet.

Card 2/3

SOV/23-112-4-13/57
The Peculiarities of the Effect of an Ionizing Radiation upon the Nuclear
Apparatus of Sexual Cells of Ape Males

ASSOCIATION: Institut biofiziki, Akademii nauk SSSR
(Institute of Biophysics, Academy of Sciences, USSR)

PRESENTED: May 24, 1958, by I. I. Shmal'gauzen, Academician

SUBMITTED: May 23, 1958

Card 3/3

21(3)

AUTHORS:

Tinyakov, G. G., Arsen'yeva, M. A.,
Bocharov, Yu. S.

SO/20-122-5-14/56

TITLE:

Age-Dependent Characteristic Features in the Structure
of the Testicles of Apes and Their Reaction to an
Ionizing Irradiation (Vozrastnyye osobennosti v stroenii
semennikov obes'yan i ikh reaktsiya na ioniziruyushcheye
oblucheniye)

PERIODICAL:

Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 5,
pp 799 - 801 (USSR)

ABSTRACT:

The present paper investigates the histological changes in
the testicles of apes if exposed to the action of
various doses of ionizing irradiation. The authors
investigated the testicles of normal and of irradiated
apes *Macaca mulatta* (rhesus), which had been killed at
the Sukhumskaya mediko-biologicheskaya stantsiya AN SSSR
(Sukhumi Medical-Biological Station of the Academy of
Sciences USSR) and at the Institut po izucheniyu polio-
mielita (Institute for the Study of Poliomyelitis). A
total of 47 animals of different ages was examined.

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Age-Dependent Characteristic Features in the Structure of the Testicles of Apes and Their Reaction to an Ionizing Irradiation SOV/20-122-5-14/56

The conditions of irradiation were given. The testicles were fixed in 10% formalin. First, the normal structure of the testicles of *Macaca mulatta* is described in short. The test animals were subdivided into 2 groups: Group I comprises the animals which were irradiated before puberty, and group II the animals which were irradiated in the state of puberty. The histological structure of the animals of group I is very similar to the structure of the testicles of normal apes before the stage of puberty, and there is no spermatogenesis in their case. In apes, which were irradiated at the age of 2 years and were killed after further 2 years, the spermatid ducts develop asynchronously, for the irradiation of 2 years old apes delays the development of the spermatid ducts. In animals which were irradiated in the state of puberty with doses of from 150 to 400 R, an outwardly normal course is found to be taken by spermatogenesis 2 years after irradiation. However, in the testicles of these animals pyknotic degenerated nuclei are found

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Age-Dependent Characteristic Features in the Structure of the Testicles of Apes and Their Reaction to an Ionizing Irradiation 307/20-122-5-14/56

to form more frequently than in normal cases. In animals which were irradiated before the state of puberty, spermatogenesis occurs two years later than in normal cases. A dose of more than 450 r renders the apes completely sterile. Certain harmful consequences caused by ionizing radiation remain as long as the animal lives. There are 2 figures and 4 references, 1 of which is Soviet.

ASSOCIATION: Institut biofiziki Akademii nauk SSSR (Institute of Biophysics of the Academy of Sciences USSR)

PRESENTED: May 24, 1952, by I.I. Shvab'yan, Academician

SUBMITTED: May 25, 1952

Card 3/4

1. A. A. ...
"Cytogenetic Consequences of the Action of Radiation Upon the Spermatogenesis of Monkeys."

Soviet Scientists Concerning the Dangers of Nuclear-Weapon Tests, p. 91,
Publishing House of the Main Administration for the Use of Atomic Power,
Council of Ministers USSR, Moscow 1959.

DUBININ, N.P.; ARSEN'YEVA, M.A.

Human radiation radiation genetics. Itogi nauki: Biol. nauki
no. 3:228-258 '60. (MIRA 13:10)
(RADIATION—PHYSIOLOGICAL EFFECT) (HUMAN GENETICS)

27 2700

27. 1220

33314
S/560/61/000/010/012/016
D298/D302

AUTHORS:

Arsen'yeva, M. A., Antipov, V. V., Petrukhin,
V. G., L'vova, T. S., Orlova, N. N., and
Il'ina, S. S.

TITLE:

Changes in the blood-forming organs of mice
under the effect of flight in a space-ship

SOURCE:

Akademiya nauk SSSR. Iskusstvennyye sputniki
Zemli. no. 10. Moscow, 1961, 82-92

TEXT: A study was made of the effects of flights in a space-
ship (the 2nd Sputnik) on the blood-forming organs of mice. An
attempt was made to differentiate between the action of vibra-
tion, acceleration and X-rays. The experiments were carried
out on 40 black C-57 (S-57) strain and white non-species mice.
Their weight fluctuated between 18 - 22 g. The same group of
animals was also used for the standard. All the animals re-
turned from cosmic flight in good condition. Cytology and

Card (1/4)

Changes in the...

33311

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D298/D302

histology methods for investigating the brain and spleen were used. The peripheral blood and the morphology of the bone marrow were studied. Experiments showed that there is a statistically valid frequency increase of mitosis destruction in the bone marrow cells of the experimental animals compared to the controls. Obtained data on chromosome destruction of mitosis in the cells of the bone marrow in mice having been in cosmic flight showed that these differed from the results obtained in X-radiation. Two main differences were noted: (1) in cosmic flight, the frequency of chromosome destruction did not drop prior to the end of the experiment; (2) there was almost complete absence of fragmentation in chromosome changes. The morphology studies of the bone marrow showed that in mice isolated for 30 days after returning to earth a sharp rejuvenation of the myelopoiesis was noted, expressed through an increased number of myeloblasts, promyelocytes, myelocytes. Analysis of the peripheral blood showed no noticeable deviations from the

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Changes in the...

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controls. The hystology tests indicated that in the spleen of mice isolated for three days after the experiment the number of megacariocytes drops. Further analysis of the cytology and histology data revealed that certain changes were noted in the blood-forming organs of the mice after cosmic flight. It is assumed, however, that these changes occurred due to several factors in addition to cosmic radiation. Special tests to differentiate the effects of the various factors showed that cosmic flight caused changes in the blood-forming organs due to mechanical factors as well as primarily vibration. Listed data indicate that vibration is one of the main causes of bone marrow and spleen changes. The biological effectiveness of cosmic radiation and other flight factors is said to be still unknown, requiring further studies of cosmic radiation effects over long periods of time on biological specimens. There 6 figures, 5 tables and 4 references: 1 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as

Card 3/4

Changes in the...

S/560/⁵³³¹⁴61/000/010/012/016
D298/D302

follows: F. Devik, Brit. J. Radiol., 27, 463, 1954; C. D.
Darlington, L. F. La Cour, J. Heredity, Suppl. 6, 1952.

SUBMITTED: May 3, 1961

Card 4/4

ARSEN'YEVA, M.A.; DUBININ, N.P.; ORLOVA, N.N.; BAKULINA, E.D.

Radiation analysis of the duration of mitotic phases in the spermatogenesis of monkeys (*Macaca mulatta*). Dokl. AN SSSR 141 no.6: 1486-1489 D '61. (MIRA 14:12)

1. Chlen-korrespondent AN SSSR (for Dubinin).
(SPERMATOGENESIS IN ANIMALS) (X RAYS--PHYSIOLOGICAL EFFECT)

HR-21074-11, 11. 11.

(d)
A Comparative Study of the Cytogenetic Effect of Various Kinds and Doses of Ionizing Radiation in Mice and Man

A.
M. Aronova

A comparative study of the disturbances in the mitotic cycle and in the rate of chromosome aberrations in somatic cells of mice, caused by different doses of γ -rays and fast neutrons, has shown that fast neutrons have a significantly greater cytogenetic effect than γ -rays. A greater cytogenetic effect of fast neutrons has also been found in germ cells of mice at different stages of meiotic prophase.

Vibration applied before irradiation changes the cytogenetic effect of radiation in somatic and germ cells of mice. A comparative study of the effect of different doses of radiation on the cytogenetic radiosensitivity of a monkey and mouse germ cells at the same stages of meiotic prophase showed a significantly higher cytogenetic radiosensitivity of the monkey as compared with the mouse. The radiosensitivity of germinal epithelium as analyzed in the course of its development after different doses of radiation showed a higher radiosensitivity of the monkey as compared with the mouse.

Institute of Biophysics, Academy of Sciences of the USSR, Moscow

(End of Section)

report presented at the 2nd Intl. Congress of Radiation Research,
Marquette/Yorkshire, Gt. Brit. 3-11 Aug 1962

ARSEN'YEVA, N.A., Radiobiological Lab.

"Comparison in the sensitivity of germ cells of various mammalian species."

Report submitted to the symposium on Mammalian Tissue Culture and Cytology
Sao Paulo, Brazil, 22-25 Oct. 1962.

426.

S/747/62/000/000/001/025
D268/D307

27.12.66

AUTHORS: Dubinin, I. P., Arsen'yeva, M. A. and Kerkis, Yu. Ya.

TITLE: The genetic consequences of the effect of small radiation doses on man

SOURCE: Radiatsionnaya genetika; sbornik rabot.Otd. biol. nauk AN SSSR. Moscow, Izd-vo AN SSSR, 1962, 5-23

TEXT: A review of the achievements of Western and Soviet research as follows: 1) Introduction; 2) The natural mutation process in man; 3) Mutations caused by the action of ionizing radiation; and 4) The danger from increase in background radiation on the earth. Extant experimental data are adequate for a quantitative assessment of the genetic danger to man from radiation, for studying the nature of the effect of small doses, dose size, the reduplicating rate of the natural mutation process, and also for a better substantiated comparison of the effects of radiation on heredity in man and other mammals. The true average natural mutation rate for individual genes in man, however, cannot be determined accurately

Card 1/2

The genetic consequences ...

S/747/62/000/000/001/025
D268/D307

as yet. Analysis of the mutagenic effect of doses in the 05 - 20 r range confirmed experimentally the absence of a threshold dose for mutability. A series of works demonstrates differences in radiogenetic sensitivity in different mammalian species. Experimental results are presented on structural mutations in chromosomes and among other topics the size of the reduplicating dose for fast neutrons is discussed. All radiation is harmful to man and since no threshold dose exists, any increase in radiation is dangerous. There are 75 references.

ASSOCIATION: Institut biologicheskoy fiziki AN SSSR, Moskva (Institute of Biological Physics AS USSR, Moscow) and Institut tsitologii i genetiki SO AN SSSR, Novosibirsk (Institute of Cytology and Genetics, Siberian Branch, AS USSR, Novosibirsk)

Card 2/2

42683

S/747/62/000/000/004/025
D268/D307

27.1220

AUTHORS: Arsen'yeva, M. A., Tinyakov, G. G., Wang Ang-ch'ih, Ma
Hsiu-ch'uang and Chang Chun-shu

TITLE: Cytogenetic radiosensitivity of sexual cells in monkeys
and mice at small and other dose levels

SOURCE: Radiatsionnaya genetika; sbornik rabot. Otd. biol. nauk
AN SSSR. Moscow, Izd-vo AN SSSR, 1962, 50-62

TEXT: In continuation of earlier work (Trudy mezhd. Konf. po mirno-
mu ispol'zov. atomnoy energii, M., 385-396, 1959) male monkeys (Ma-
caca mulatta: 16 5 - 14 year-old individuals) and 2 - 3 month-old
white mice were wholebody irradiated with single exposures to x rays
at 10 - 400 r for the former and 10 - 600 r for the latter and were
also irradiated with ^{60}Co gamma-rays at 10 and 50 r. Irradiation in-
creased the chromosome reorganization rate in germinal cells in both
subjects, the average rate being 0.115 and 0.057% in monkeys and
mice respectively for 1 r at 10 days after exposure. Cytological and

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Cytogenetic radiosensitivity ...

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D268/D307

histological analyses of testes at different times after irradiation showed disruption of spermatogenesis in monkeys after 10 r, temporary sterility at 30 days following 30 r, and at 20 days following 200 r. Temporary sterility was detected in mice at 20 days after 200 r. Results showed higher radiosensitivity in the germinal epithelium of monkeys than in mice. The rate of chromosome reorganization in monkeys at 10 days is thought to double at 3.8 r, and that in mice at 9.3 r, showing that the radiosensitivity of the germinal epithelium in monkey is 2 - 2 1/2 times higher than that in mice. There are 9 figures and 2 tables. X

ASSOCIATION: Institut biologicheskoy fiziki AN SSSR, Moskva (Institute of Biological Physics AS USSR, Moscow) and Institut biologicheskoy fiziki AN KNR, Pekin (Institute of Biological Physics AS CPR, Peking)

Card 2/2

ARSEN'YEVA, M.A.; ANTIPOV, V.V.; PETRUKHIN, V.G.; L'VOVA, T.S.;
ORLOVA, N.N.; IL'INA, S.S.; KABANOVA, L.A.; KALYAYEVA, E.S.

Effect of space flight in spaceships on the cytological and
histological changes in the hemopoietic organs of mice.
Probl.kosm.biol. 2:116-127 '62. (MIRA 16:4)
(SPACE FLIGHT—PHYSIOLOGICAL EFFECT)
(HEMOPOIETIC SYSTEM)

42695

8/747/62/000/000/019/025
D243/D307

21.2400
AUTHORS: Dubinin, N. P., Arsen'yeva, M. A., Kalyayova, E. S., Ma
Hsui-ch'uang and Wang Ang-ch'ih

TITLE: The protective effect of cysteamine (β -mercaptoethylami-
ne) on chromosome reorganization in the tissues of mon-
keys and mice

SOURCE: Radiatsionnaya genetika; sbornik rabot. Otd. biol. nauk
AN SSSR. Moscow, Izd-vo AN SSSR, 1962, 287-299

TEXT: The effect of cysteamine in protecting from x ray damage
bone marrow and germinal epithelial cell nuclei was studied at the
first order spermatocyte stage in mice and monkeys (*Macaca mulat-*
ta). 2 - 3 months old mice, 25 - 30 g in weight and of the Kun'-
minsky line, were given 3 mg/150 mg/kg cysteamine intraabdominally,
10 minutes before irradiation with single doses of 200, 400 and
600 r, at 1.5 r/min. The mice were killed 1, 2, 5 and 10 days la-
ter and the testicles and a section of the femur were removed for
analysis. Sexually mature, 6 - 8-year old monkeys received 3 mg/

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The protective effect ...

S/747/62/000/000/019/025
D243/D307

100 mg/kg cysteamine 10 minutes before irradiation with 200-r doses, were castrated 24 hours later, and a section of a rib was removed. Controls have the second testicle and a second rib removed on the 10th day. In mice, cysteamine protected the germinal epithelial and bone marrow cells to an average extent of 42.75 and 50.77% respectively, as compared with controls, and in monkeys, to 52.4 and 50.8%. The monkeys' germinal epithelial cells were much more radiosensitive than those of mice. The latter showed no difference in effect in pachytene and diplotene. The level of protection obtained in these experiments was exceptionally high, 50% as compared with the 30% obtained by Devik and Lothe. The two results are not, however, strictly comparable. Kimball's theory that radiation-protection is not linked solely to removal of the oxygen effect is supported. In both organs, cysteamine protects against chromosome reorganization but not against chromosome adhesion, which indicates that it acts by forming DNA-cysteamine complexes. There are 4 figures and 5 tables.

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The protective effect ...

U/747/62/000/000/019/025
D243/D307

ASSOCIATION: Institut biologicheskoy fiziki AN SSSR, Moskva; Institut biologicheskoy fiziki AN KNR, Peking (Institute of Biological Physics, AS USSR, Moscow; Institute of Biological Physics, AS CPR, Peking)

Card 3/3

s/063/62/001/001/110/031
E028/E185

AUTHORS: Arsen'yeva, M.A., Antipov, V.V., Petrushin, V.G.,
L'vova, T.S., Orlova, N.N., and Il'ina, S.S.

TITLE: Changes in the haemopoietic organs of mammals under
the influence of space flight

SOURCE: Problemy kosmicheskoy biologii, v.1. Ed. by
N.M. Sisakyan. Moscow, Izd-vo AN SSSR, 1962. 363-312

TEXT: In a study of the effect of cosmic radiation upon the
haemopoietic system 40 mice of the C57 strain which had been on a
space flight were killed at intervals up to 60 days after return
and cytological preparations were made of the peripheral blood,
spleen and bone marrow. Abnormalities of mitosis in the form of
bridges and adhesions were observed in 7.12 - 10.7% of cells in
anaphase and telophase, compared with 1.96 - 3.8% of abnormalities
in preparations from control animals, and no decline in the
proportion of affected cells had occurred by the end of the
observation period. The findings differed in this respect from
the effects of X-irradiation, where the proportion of chromosome

Card 1/2

Changes in the haemopoietic organs...

5/865/62/001/000/010/035

E028/E185

abnormalities declines steadily and the usual finding is fragmentation of the chromosomes. No abnormalities were noted in preparations of the peripheral blood. Preparations of the spleen showed a decline in megakaryocytes after 3 days and shrinkage of follicles after 9 days, followed later by enlargement and the appearance of atypical cells. The chromosome abnormalities described could be largely duplicated by exposure of normal mice to vibration, which was probably of greater importance than cosmic radiation as a cause of abnormalities in animals undergoing space flights.

There are 6 figures and 5 tables.

Card 2/2

S/868/62/002/000/512/042
D405/D301

AUTHORS:

Arsen'yeva, M.A., Antipov, V.V., Patrikhin, V.G.,
L'vova, I.S., Orlova, N.W., Il'ina, S.S., Kabanova,
L.A., and Kalyayeva, E.S.

TITLE:

Cytologic and histologic changes in blood-forming
organs of mice under the effect of space flight
conditions

SOURCE:

Problemy kosmicheskoy biologii, v. 2, Ed. by N. Siga-
kyan and V. Yezhovskiy, Moscow, Izd-vo AN SSSR, 1962,
116-127

TEXT:

In the investigations, an attempt was made at differenti-
ating between the effects of dynamic factors of flight such as
vibration, acceleration and weightlessness. The experiments were
conducted on males of black-linear (C57) mice, and on white mice.
A cytological analysis of the bone marrow cells revealed a distor-
bance of mitosis under the effect of space flight. It was found
that the majority of chromosome aberrations appeared not as a result

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Cytologic and histologic ...

8/145/62/002/000/015/042
D405/D301

of chromosome disruption, but through sticking together with possible subsequent anomalous separation. Morphological studies of the bone marrow showed, after 30 days, an increase in the number of myeloblasts, promyelocytes and myelocytes. Histologic investigations of the spleen of the mice showed, during the first days of the experiment, a decrease in the number of follicles and megacaryocytes; towards the 30th day the number of the latter increased again and on the 60th day the blood formation was renewed. Special experiments were conducted in order to ascertain the specific effects of vibration, acceleration and weightlessness. It was found that Serotonin, introduced intraperitoneally into the mice 10 minutes before the experiment, was an effective means of protection against vibration damage of cells. Conclusions: Space flight caused disturbances in the bone marrow and spleen of mice that were recorded two days after the flight and lasted for a month. Both vibration and weightlessness experiments produced such alterations as chromosome fusion. Acceleration in a state of weightlessness can lead to a disruption in the spindle apparatus of the cell. It is evident that the effects of space flight on the cell constitute a complex problem, involving

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Cytologic and histologic ...

3/865/62/002/00/012/042
D405/D301

many factors. However, the biological action of cosmic radiation is altogether undetermined as yet, requiring further studies. There are 9 figures and 3 tables.

Card 3/3

ARSENYEVA, M. A., ORLOVA, N. H., and BAKULINA, E. D.,

"A Comparative Genetic Analysis of the Radiosensitivity of Germ. and Somatic Cells of Monkeys (*Macaca mulatta*) and Mice."

report submitted for the 11th Intl. Congress of Genetics, The Hague, Netherlands, 2-10 Sep 63

I-17882-63

EWI(1)/EWI(2)/EWS/EW(1)

AND/AMTS/EE

1/5805/63/01/00

1/0565/0040

ACCESSION NR:

AP0009935

AUTHORS: Arsen'yeva, M. A.; Boshkov, M. P.

TITLE: The cytogenetic radiosensitivity of some stages of meiosis in monkeys and mice

SOURCE: Radiobiologiya, V. 5, no. 4, 1963, 563-569

TOPIC TAGS: cytogenetic radiosensitivity, meiosis, gonads, x-irradiation, spermatocyte, chromosome reorganization, spermatogonia

ABSTRACT: In experiments inspired by interest in the genetic risks of ionizing radiation, the gonads of 4-5 year old male monkeys (*Macaca mulatta*) and Russian bred mice (ca. 2 months old) were exposed to a single dose of x-irradiation (5) and 100 r), and its effect on the 5 stages of meiosis was studied in testis preparations. Monkeys proved to be 2-2.5 times as radiosensitive as mice. First-order spermatocytes of monkeys showed variable sensitivity at various stages of meiosis, being most sensitive in diakinesis-metaphase I. On the average, there were 0.156% chromosome reorganizations per r in prophase in monkey, as against 0.066% in mice. The greater frequency of chromosome reorganization in the prophase of meiosis in monkeys, as well as the greater sensitivity of type I spermatogonia

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L 17682-63

ACCESSION NR: AP0003935

in these animals, indicates that in higher mammals the nuclei of embryonic epithelium are apparently more sensitive than those of mice at all stages of epithelial development. Orig. art. has: 2 figures, 4 tables.

ASSOCIATION: Institut biologicheskoy fiziki AN SSSR, Moscow (Institute of Biophysics, AN SSSR); Institut eksperimental'noy patologii i terapii AN SSSR, Sukhum (Institute of experimental pathology and therapy, AN SSSR)

SUBMITTED: 05Sep62

DATE ACQ: 14Aug65

ENCL: 00

SJB CODE: AS

NO REF SOV: 005

OTHER: 004

Card 2/2

ARSEN'YEVA, M.A.; BOCHKOV, N.P.

Cytogenetic radiosensitivity of monkeys and mice in some stages of meiosis. Radiobiologiya 3 no.4:563-569 '63.
(MIRA 17:2)

1. Institut biologicheskoy fiziki AN SSSR, Moscow i Institut eksperimental'noy patologii i terapii AN SSSR, Sukhumi.

"Genetic effect of small doses of ionizing radiation."

report submitted for 3rd Intl Conf, Peaceful Uses of Atomic Energy, Geneva,
31 Aug-9 Sep 64.

7
ARSEN'YEVA, M.A., BELYATEVA, L.S., GOLITSKINA, A.V.

Effect of the combined action of accelerations, vibration
and radiation on cell nuclei of the bone marrow in mice.
Probl. kosm biol. 4:373-390 '65.

(MIRA 18:9)

L 43 10-00 2001 11/13/01 11/13/01

ACC PER AP5026000

FOURCE CODE: 01171291161702 170057019670807

AUTHOR: Araev'skaya, M. A.; Belykh'skaya, L. A.; Denis, Yu. M.; Pokornaya, G. I.;
Golovitsina, A. V.; Gavrilina, L. I.

ORG: none

TITLE: The effect of some space-flight factors on the hereditary structures of man-
nals

SOURCE: Kosmicheskiye issledovaniya, v. 3, no. 5, 1965. 196-801

TOPIC TAGS: animal genetics, biologic mutation, radiation biologic effect, radiation injury, vibration effect, acceleration effect

ABSTRACT: The effect on certain mammalian structures (bone marrow, spleen, and testes) of vibration and acceleration is studied, as independent factors and in combination with radiation. In the first series of experiments, mice were subjected to vibration with a frequency of 35 and 75 cps (amplitude 0.4 mm) for 15 min, 1 hr, and 4 hr. Experimental results showed an increase in the frequency of chromosome adhesions and an increased frequency of chromosome rearrangements in bone-marrow cells and spleen, together with adhesion of chromosomes in the metaphase of mitosis of testis cells. In the second series of experiments, mice were subjected to acceleration of 8 g for 5 and 15 min. This factor caused an increase in the frequency of chromosome adhesions, and some increase in the number of chromosome rearrangements and chromosome fragments.

Card 1/2

UDC: 629.198.01.591.15

210625

L 4505-66

ACC NR: AP5026050

tions in the bone-marrow cells of mice. In general, it was found that vibration and acceleration cause disruptions in the nuclei of bone-marrow and spleen cells. Another group of experiments on the combined effect of vibration or acceleration and radiation on the cell nucleus showed a general decrease in the radiation effect. Either of these factors, when applied prior to irradiation with x-rays (53 rad/min) or fast neutrons (11 rad/min), decreased the radiation effect in the following manner: They decreased the frequency of chromosome aberrations in bone-marrow cells by the second day after irradiation and decreased the frequency of chromosome aberrations in germ cells after 24 hr. However, the protective effect of vibration and acceleration depends not only on when the effect was exerted (prior to or after irradiation), but also on the time interval between the influence of these factors and subsequent irradiation. Analysis of the mechanism of the combined effect of these factors is a very complex problem and requires much more investigation. Orig. art. has 10 tables and 1 figure.

SUB CODE: LS/ SUBM DATE: 03Apr64/ ORIG REF: 007/ ONE REF: 001/ ATD FROM: 4130 [JS]

Card 2/2

L 4727-66
ACC NR: AP603.663

SOURCE CODE: UH/0216/66/000/005/0625/0643

AUTHOR: Frank, G. M.; Livshits, N. N.; Arsen'yeva, M. A.; Apanasenko, Z. I.;
Belyayeva, L. A.; Golovkina, A. V.; Klimovitskiy, V. Ya.; Kuznetsova, M. A.;
Luk'yanova, L. D.; Mayzerov, Ye. S.

70
69
B

ORG: Institute of Biological Physics, AN SSSR (Institut biologicheskoy fiziki
AN SSSR)

TITLE: The combined effect of spaceflight factors on some functions of the organism

SOURCE: AN SSSR. Izvestiya. Seriya biologicheskaya, no. 5, 1965, 625-643

TOPIC TAGS: central nervous system, biologic oxidation, biologic metabolism,
reflex activity, brain tissue, radiation effects, ~~ionizing~~ radiation biologic effect,
ionizing radiation

ABSTRACT: Results of experiments studying the combined effect of spaceflight factors
(acceleration, vibration, and radiation) on some functions of the organism (brain
hemodynamics, CNS functions, and cell division of hematopoietic organs) are dis-
cussed. Tolerance of the CNS to accelerations depends significantly on changes of
brain hemodynamics during accelerations. Brain blood flow in rabbits subjected to
centrifugal accelerations in the head-foot direction (5 G in head region and 10 G
in pelvis region) for 12 to 60 sec decreased. This reaction was insignificant
during the first exposure, sharply increased during repeated exposure, and weakened
after chronic exposure, thus indicating that tolerance to accelerations can be

Card 1/3

UDC: 611.8:629.195.2

ACC NR: AP6031563

increased by training. Participation of CNS reflex mechanisms in these processes is probable. The 15-min exposure of guinea pigs to radial accelerations (8 G), centrifuged twice with a one-day interval, increased the spontaneous bioelectrical activity of extensor muscles; however, the effect was not lasting. It was lowered the day after the second centrifugation and was essentially the same as the control from the sixth day. The 15-min exposure of the animals to vibrations (70 cps, 0.4 mm amplitude), twice with a one-day interval, produced less distinct but more stable changes, with normalization more than 25 days after the first vibration exposure. Changes in myoelectric activity during spaceflight (Sputnik-4) incorporated features of both acceleration and vibration effects, appreciably exceeding them in intensity. Oxidation processes in brain tissues, judged by PO₂ and "oxygen test" results, were initially increased in intensity by the effect of vibrations (using the above parameters), and subsequently underwent phase changes, including depression of oxidation metabolism during the aftereffect period. Changes in unconditioned defense and vestibulotonic reflexes and upper nervous activity were observed later than 12 days after vibration. Inhibition of food-procuring conditioned and defensive unconditioned reflexes in the majority of animals, with pronounced paralytic phenomena, was also found. Exposure to 8-, 10-, and 20-G accelerations and vibration (700 cps, 0.005 mm, 60 min) resulted in decreased mitotic activity of bone-marrow cells for 30 days. Disturbances of cell division involved chromosomal stickiness and increase in the number of chromosomal aberrations. Ionizing radiations and the above dynamic factors produced a similar effect on oxidation metabolism in brain tissues and cellular division in hematopoietic organs. They differed

Core 2/2

L 47293-66

ACC NR: AP6031663

only in the level and dynamics of changes caused. The combined effect of irradiation and dynamic factors either did not exceed or was less than the effect of each of the indicated factors separately, a phenomenon seen as a radioprotective action of dynamic factors. The relations observed are similar to phenomena of dominance and parabiosis. Typical radiation reactions were intensified when irradiation was combined with factors having directly opposed effects. The variation and complexity of results of the combination of dynamic factors and irradiation are explained by the multiplicity of the mechanisms of the combined effect of radiation and nonradiation factors. The combined exposure to vibration and whole-body acute irradiation at a lethal dose shows that in a majority of cases the vibration effect on metabolism and CNS function was dominant at early stages, while that of irradiation prevailed at later stages. At the latest stages of exposure, the combined effect of vibration and irradiation was diverse and complicated. According to some indices, the trend of changes corresponded to the effect of one of the factors while the dynamics of the processes reflected the effect of the other one. Under the uniform action of both factors, the phenomena of partial summation of weakening of the radiation effect, and in several cases of a sharp increase of radiation effect by the opposite action of the vibration effect, were observed. Probable mechanisms of the phenomena described are considered. Orig. art. has: 13 figures. [SW]

SUB CO: 06/ SUBM DATE: 14Dec65/ ORIG REF: 032/ OTH REF: 008/ ATD PRESS:

5095

Card 3/3

ACC NR: AT7002500

SOURCE CODE: UR/0000/65/000/000/0122/0130

AUTHOR: Arsen'yeva, M. A.; Golovkina, A. V.

ORG: Institute of Biological Physics, AN SSSR, Moscow (Institut biologicheskoy fiziki AN SSSR)

TITLE: Comparative analysis of the mutagenic effect of an alkylating compound (Thio TEPA) and radiation on mouse bone marrow cells

SOURCE: AN SSSR. Nauchnyy sovet Radiobiologiya. Vliyaniye ioniziruyushchikh izlucheniye na nasledstvennost' (Effect of ionizing radiation on heredity). Moscow, Izd-vo Nauka, 1966, 122-130 and inserts following p. 130

TOPIC TAGS: biologic mutation, radiation biochemical effect, radiation cell effect

ABSTRACT: A comparative analysis of the effect of radiation in a dose of 100 r and the intraperitoneal injection of Thio-TEPA in a dose of 4 mg/kg showed certain differences in the effect of these two mutagens when the bone marrow cells were studied. Thio-TEPA in the indicated dose caused an appreciably more pronounced cytotoxic and cytostatic effect than the radiation. The mutagenic effect of Thio-TEPA showed up at appreciably later periods after injection in comparison with the effect of radiation; it was found to be related with the appearance of both chromatid and chromosome aberrations. Orig. art. has: 4 tables and 5 figures. [26]

SUB CODE: 06/ SUBM DATE: 01Sep66/ ORIG REF: 002/ OTR REF: 006/ ATD PRESS: 5117
Card 1/1 UDC: none

AKSEN'YEV, L.I.

AKSEN'YEV, M.G.

Clinical aspects and therapy of metrorrhagia in adolescence.
Akush. i gin. no.3:12-15 My-Je '55. (MLHA 8:10)

1. Iz Instituta akusherstva i ginekologii (dir.-prof. P.A. Beloshapko) Akademii meditsinskikh nauk SSSR.
(MENORRHAGIA AND METRORRHAGIA
in adolescence, clin. aspects & ther.)
(ADOLESCENCE, dis.
metrorrhagia, clin. aspects & ther.)

ARSEN'YEVA, M.G.

"Sodium Salt of Usnic Acid,"

p. 217 Ministry of Health USSR Proceedings of the Second All-Union Conference on Antibiotics, 31 May - 9 June 1957. p. 405, Moscow, Medgiz, 1957.

ARSEN'YEVA, M.G.; KISTING, M.G.

Treatment of posthemorrhagic anemias in female patients with new
hemostimulating preparations. Akt.vop.perel.krovi no.7:198-202 '59.
(MIRA 13:1)

1. Institut akusherstva i ginekologii ANU SSSR (direktor - chlen-
korrespondent ANU SSSR prof. P.A. Beloshapko).
(BLOOD AS FOOD OR MEDICINE) (ANNNIA)

ARSEN'YEVA, M.G.; KISTING, M.G.

New hemostimulating preparations in the treatment of posthemorrhagic anemias in gynecological patients [with summary in English]. Akush. i gin. 35 no.1:71-73 Ja-F '59. (MIRA 12:2)

1. Iz otdeleniya operativnoy ginekologii (zav. - doktor med. nauk Ye. P. Mayzel') i kliniko-diagnosticheskoy laboratorii (zav. - kand. med. nauk N.L. Vasilevskaya) Instituta akusherstva i ginekologii ANU SSSR (Zir. - chlen-korrespondent ANU SSSR prof. P.A. Beloshapko).

(MENORRHAGIA AND METRORRHAGIA, compl.

anemia in funct. uterine hemorrh., plasma substitute ther. (Rus))

(PLASMA SUBSTITUTES, ther. use, anemias in funct. uterine hemorrh. (Rus))

(ANEMIA, etiol. & pathogen.

funct. uterine hemorrh., plasma substitute ther. (Rus))

ARSEN'YINA, M.G.

A case of folliculoma of the ovary in a five-year-old girl. Akush. i
gin. 35 no.5:111 8-0 '59. (MIRA 13:2)

1. Iz endokrinnoy laboratorii (nauchnyy rukovoditel' - chlen-korres-
pondent AMN SSSR prof. V.G. Baranov) i otdeleniya neoperativnoy gine-
kologii (sveduyushchiy - prof. S.G. Khaskin) Instituta akusherstva
i ginekologii AMN SSSR (direktor - chlen-korrespondent AMN SSSR prof.
P.A. Beloshapko).

(GRANULOSA CELL TUMOR, case reports)
(OVARY, neoplasms)

ARSEN'YEVA, M.G.

Hormonal therapy for various forms of climacteric neuroses. Probl.
endok. 1 germ. 6 no. 2:84-90 Mr-Apr '60. (MIRA 14:1)
(CLIMACTERIC) (NEUROSES) (SEX HORMONES)

ARSEN'YEVA, M.G.; SAVCHENKO, O.N.; STAPANOV, G.S.

Correlation between the cytological picture of the vaginal
smear and the 24-hour excretion of estrogens in the urine
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ARSEN'YEVA, M.G.; RASKIN, A.M.

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(NEUROSES)

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Vestibular disorders in climacteric neurosis. Sov. med.
25 no.2:98-102 F '62. (MIRA 15:3)

1. Is endokrinologicheskogo otdeleniya (nachnyy rukovoditel' -
deystvitel'nyy chlen AMN SSSR prof. V.G. Baranov) Instituta akush-
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(VESTIBULAR APPARATUS...DISEASES)
(NEUROSES) (CLIMACTERIC)

ARSEN'YEVA, M.G.

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1. Iz Akademicheskoy endokrinologicheskoy gruppy i endokrinoy
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SSSR prof. V.G. Baranov) i otdeleniya neoperativnoy ginekologii
(zav. - doktor med. nauk Ye.P. Mayzel') Instituta akusherstva
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Beloshapko [dokladchik] AMN SSSR.
(VAGINAL SMEARS) (ANDROGENS)

ARSEN'YEVA, Mariya Georgiyevna; ALIPOV, V.I., red.; HUGROVA, T.I.,
tekhn. red.; LEBEDEVA, O.T., tekhn. red.

[Fundamentals of hormonal cytological diagnosis in
gynecology] Osnovy gormonal'noi tsitologicheskoi diag-
nostiki v ginekologii (s al'bomom). Moskva, Medgiz, 1963.
184 p. (MIRA 17:2)

ZHIGENIDZE, G.A.; MAREI, A.N.; ARSEN'YEVA, M.A.; YURCHENKO, Ye.I.; KAMENOV, R.Ye.; KOLFSNIKOVA, A.T.; GEDEONOV, L.T.; ZELENSKY, A.G.

Third International Conference on the Use of Atomic Energy for Peaceful Purposes (Geneva, 1964). Med. rad. 10 no.1:44-91 Ja '65. (MIRA 18:7)

ARSEN'YEVA, M.G.

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chlen AMN SSSR prof. V.G. Baranov) i otdeleniye neoperativnoy ginekologii
(sav. - doktor med. nauk Ye.P. Maysel') Instituta akusherstva i ginekologii
(dir. - chlen-korrespondent AMN SSSR prof. M.A. Petrov-Maslakov) AMN SSSR,
Leningrad.

BARANOV, V.G., prof.; ARSEN'YEVA, M.G.; RASKIN, A.M.; RAPAL'SKIN, Ya.E.; SAVCHENKO, O.N.; STEPANOV, G.S.; ALIPOV, V.I., red.

[Physiology and pathology of the female climacteric] Fiziologiya i patologiya klimakteria zhenshchiny. Leningrad, Meditsina, 1965. 269 p. (MIRA 18:9)

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ARSEN'YEVA, N. V.

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ARSEN'YEVH, M.V.

The first of these is the fact that the
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 ninth of these is the fact that the
 tenth of these is the fact that the

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C. D. North.

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[Pests and diseases of field crops in Irkutsk Province] Vrediteli
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Irkutskoe knizhnoe izd-vo, 1957. 240 p. (MIRA 12:4)
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ARSENT'YEVA, N.G.

Synthesis of sentences in Russian with the aid of machines.

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(MIRA 16:11)

ARSENT'YEVA, N.G. (Moskva)

Use of a machine in the synthesis of Russian language sentences.
Probl. kib. no.10:227-240 '63. (MIRA 18:4)

ARSENYAN, R.P., inzh. (Erivan); ARSHAKYAN, D.T., kand. tekhn. nauk (Erivan)

Area of use for central heat supply from boilers. Vod. i san. tekhn.
no.1:19-22 Ja '66. (MIRA 19:1)

ACC NR: AT6003872

SOURCE CODE: 12865/65/00/000/0373/0390

AUTHOR: Arsen'yeva, M. A.; Belyayeva, L. A.; Golovkina, A. V.

ORG: none

TITLE: Effect of combined exposure to acceleration, vibration, and radiation on bone marrow cell nuclei in mice

SOURCE: AN SSSR. Otdeleniye biologicheskikh nauk. Problemy kognitivnoy biologii, v. 4, 1965, 373-390

TOPIC TAGS: mouse, radiation biologic effect, biologic acceleration effect, biologic vibration effect, cell physiology, bone marrow, x ray irradiation, mitosis

ABSTRACT: The mitotic activity of the bone marrow cells of mice exposed to the individual and combined effects of acceleration vibration and radiation was studied. The experimental parameters of the tests and their quantitative results are given in the following tables.

Card 1/8

ACC NR. AT600387

Table 1. Frequency of cell nucleus disruptions in the bone marrow of mice exposed to 20 G

Killed after exposure	Action	Cells observed		% Disruptions	n	Chromosomal arrangement			Adherence	Mitotic Index
		All	No. of disruptions			Bridges + bridges with fragments	Fragments	% Re-arrange-ment		
1 hr	1	121	63	51.24 ± 4.34	—	12.40 ± 2.06	24.71 ± 4.20	47.11 ± 4.34	—	4.12 ± 1.11
	2	290	103	34.00 ± 3.83	0.4	3.50 ± 1.00	36.00 ± 3.47	43.50 ± 3.50	0.4	10.20 ± 2.10
	3	196	73	43.00 ± 3.88	1.2	6.02 ± 1.83	36.72 ± 3.58	36.76 ± 3.24	1.7	7.28 ± 2.01
4 hr	1	730	460	60.00 ± 1.78	—	24.10 ± 1.51	29.65 ± 1.97	53.84 ± 1.80	—	7.15 ± 0.13
	2	1511	782	50.10 ± 1.28	5	18.72 ± 0.91	23.07 ± 1.07	38.78 ± 1.21	5	10.31 ± 0.77
	3	712	300	37.00 ± 1.75	9	9.23 ± 1.03	20.83 ± 1.44	30.03 ± 1.83	9	7.82 ± 0.16
2 days	1	273	23	8.43 ± 1.60	—	3.66 ± 1.12	1.10 ± 0.63	4.76 ± 1.36	—	3.04 ± 1.12
	2	628	44	6.99 ± 1.01	—	1.37 ± 0.43	0.40 ± 0.73	4.17 ± 0.80	—	2.22 ± 0.12
	3	811	43	5.37 ± 0.79	—	1.06 ± 0.47	1.20 ± 0.30	4.31 ± 0.47	—	2.12 ± 0.31
Control	—	1835	110	6.00 ± 0.36	—	1.15 ± 0.34	1.11 ± 0.26	1.00 ± 0.19	—	3.34 ± 0.10

* 1—100 r; 2—20 G, 3 min, after 60 min, 100 hr

Card 2/8

L 14288-66

ACC NR, AT600357

Table 2. Effect of combined exposure to centrifugation followed by irradiation on the bone marrow cells of mice

Killed after exposure	Action	Cells examined		Disruptions ± R	Chromosomal bridges + fragments	Chromosomal bridges + fragments	Chromosomal bridges + fragments	Chromosomal bridges + fragments	Chromosomal bridges + fragments	Chromosomal bridges + fragments	Chromosomal bridges + fragments	Chromosomal bridges + fragments	Chromosomal bridges + fragments
		All	No. of disruptions										
1 hr	1	553	83	1.50 ± 0.71	—	0.00 ± 0.00	0.13 ± 0.05	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	2	1301	143	1.00 ± 0.21	3.0	1.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
	3	808	93	1.00 ± 0.13	3.0	3.21 ± 0.25	1.20 ± 0.04	1.20 ± 0.04	1.20 ± 0.04	1.20 ± 0.04	1.20 ± 0.04	1.20 ± 0.04	1.20 ± 0.04
4 hr	1	1129	121	10.71 ± 0.72	3.1	1.00 ± 0.11	0.11 ± 0.02	1.00 ± 0.11	0.11 ± 0.02	0.11 ± 0.02	0.11 ± 0.02	0.11 ± 0.02	0.11 ± 0.02
	2	333	83	14.00 ± 1.51	3.3	1.00 ± 0.24	3.10 ± 0.02	1.00 ± 0.24	3.10 ± 0.02	3.10 ± 0.02	3.10 ± 0.02	3.10 ± 0.02	3.10 ± 0.02
	3	983	107	8.71 ± 0.20	3.6	1.19 ± 0.30	1.19 ± 0.03	1.19 ± 0.30	1.19 ± 0.03	1.19 ± 0.03	1.19 ± 0.03	1.19 ± 0.03	1.19 ± 0.03
2 days	1	713	73	14.31 ± 1.11	2.9	1.20 ± 0.11	0.14 ± 0.01	1.20 ± 0.11	0.14 ± 0.01	0.14 ± 0.01	0.14 ± 0.01	0.14 ± 0.01	0.14 ± 0.01
	2	548	68	8.70 ± 1.21	1.7	1.10 ± 0.45	0.21 ± 0.06	1.10 ± 0.45	0.21 ± 0.06	0.21 ± 0.06	0.21 ± 0.06	0.21 ± 0.06	0.21 ± 0.06
	3	485	55	11.15 ± 1.41	2.5	1.83 ± 0.36	1.46 ± 0.13	1.83 ± 0.36	1.46 ± 0.13	1.46 ± 0.13	1.46 ± 0.13	1.46 ± 0.13	1.46 ± 0.13
8 G control		848	88	8.31 ± 0.70		0.36 ± 0.20	0.36 ± 0.21	0.36 ± 0.20	0.36 ± 0.21	0.36 ± 0.21	0.36 ± 0.21	0.36 ± 0.21	0.36 ± 0.21
20 G Control		1198	88	8.80 ± 0.72		1.36 ± 0.20	1.36 ± 0.23	1.36 ± 0.20	1.36 ± 0.23	1.36 ± 0.23	1.36 ± 0.23	1.36 ± 0.23	1.36 ± 0.23

Card 3/8

* 1—8 G, 5 min; 2—8 G, 15 min; 3—20 G, 5 min

ACC NR: AT600372

Table 3. Effect of combined exposure to centrifugation followed by irradiation on the bone marrow cells of mice

killed after exposure	Actions	Cells Assayed		T Dis-replications	n	Chromosomes		T Dis-arrangement	n	T Ad-herance	Mitotic Index
		All	No. of clones			11 per 1000 cells	Frags. meta				
1 hr	1	121	62	51.21 ± 1.51	3,8	12.40 ± 2.30	34.71 ± 1.31	27.11 ± 1.51	4,43	4.12 ± .04	0.10
	2	318	100	34.31 ± 2.50	3,8	8.50 ± 1.20	28.18 ± 2.24	24.78 ± 2.27	4,43	4.00 ± .30	0.11
	3	471	217	46.07 ± 2.20	1,01	7.12 ± 1.11	31.01 ± 2.17	25.27 ± 2.21	1,70	4.70 ± 1.17	0.10
4 hr	1	700	480	10.00 ± 1.50	6	24.10 ± 1.10	20.00 ± 1.10	21.10 ± 1.01	4,43	1.12 ± .05	2.21
	2	700	380	43.01 ± 1.70	6	12.00 ± 1.10	20.02 ± 1.04	22.10 ± 1.70	4,43	2.12 ± .12	1.11
	3	1314	450	34.28 ± 1.70	8,8	10.12 ± 0.12	18.20 ± 1.07	25.19 ± 1.21	14,0	4.20 ± .05	1.20
2 days	1	273	28	8.02 ± 1.04		3.04 ± 1.12	1.10 ± 0.01	4.10 ± 1.12		1.10 ± .12	2.10
	2	348	73	13.22 ± 1.43		2.02 ± 0.10	1.01 ± 0.01	4.11 ± 0.94		0.10 ± .14	1.10
	3	1304	117	9.00 ± 0.45		2.10 ± 0.10	2.74 ± 0.08	7.09 ± 0.54		2.10 ± .08	1.10
Control		1000	110	9.00 ± 0.45		1.10 ± 0.10	1.10 ± 0.01	2.10 ± 0.20		1.10 ± .20	2.10

* 1-100 r: 2-8 G, 15 min, after 60 min. 100 r: 3-8 G 15 min, after 4 hr, 100 r

Card 4/8

ACC NR: AT6003872

Table 4. Frequency of cell nucleus disruptions in the bone marrow after exposure to centrifugation for 30 min. and vibration for 60 min.

Dry killed after exposure	Magni-tude	Cells examined		% Dis-ruptions	n	Chromosomal rearrangement				Ad-Reference	n	Ad-Reference
		All	No. of disruptions			Bridge with gaps	Fragmentation	% Metaphase	% Metaphase			
1st	10G 700cps	303	33	0.50 ± 1.11	—	0.00	—	1.10	1.10 ± 0.63	4.37 ± 0.94	—	2.41
		414	34	12.10 ± 1.53	3.7	4.76	—	0.65	4.73 ± 1.03	7.43 ± 1.25	2.6	2.60
3rd	10G 700cps	800	60	0.75 ± 0.61	—	2.20	—	0.78	1.15 ± 0.56	3.40 ± 1.02	1.4	2.44
		1020	120	11.70 ± 1.03	4.8	4.12	0.40	1.13	3.60 ± 0.73	5.40 ± 0.74	9.3	2.63
7th	10G 700cps	761	44	5.81 ± 0.82	—	3.44	0.30	0.89	4.72 ± 0.78	0.80 ± 1.33	—	2.61
		764	61	6.30 ± 1.00	2.1	3.85	0.13	0.34	4.37 ± 0.78	5.30 ± 1.39	2.8	2.60
15th	10G 700cps	780	40	0.37 ± 0.64	—	3.77	0.20	0.39	4.02 ± 0.74	1.85 ± 0.50	—	2.71
		426	26	0.10 ± 1.18	—	1.47	—	1.00	3.00 ± 0.88	3.00 ± 0.83	—	2.85
30th	10G 700cps	506	45	8.91 ± 1.38	2.3	3.37	0.19	0.85	5.31 ± 0.82	5.85 ± 1.00	2.6	2.60
		310	10	5.80 ± 1.30	—	3.72	0.32	0.32	4.30 ± 1.15	1.87 ± 0.80	—	3.00
Control		1317	77	3.83 ± 0.44	—	3.36	0.15	0.84	3.34 ± 0.51	3.54 ± 0.50	—	3.20

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ACC NR: AT6003072

Table 5. Effect on the bone marrow cells of mice of combined exposure to centrifugation or vibration followed by x-ray irradiation after 24 hours

Dry killed after exposure	Action	Cells examined		Disruptions	n	X Chromosomal rearrangements				Ad-herens	Mitotic Index
		All	No. of divisions			Bridge	Gap	Ring	Other		
3rd	1	420	80	21.43 ± 2.00	—	5.00	3.37	11.43	28.00 ± 1.00	—	1.43 ± 0.31
	2	75	14	18.66 ± 4.23	—	0.33	3.00	8.33	17.28 ± 1.07	—	1.33 ± 0.21
	3	182	40	21.98 ± 3.00	—	10.48	2.10	7.14	19.75 ± 2.25	—	1.20 ± 0.01
7th	1	629	121	10.24 ± 1.37	—	8.90	1.48	7.79	18.12 ± 1.14	—	1.11 ± 0.41
	2	471	41	8.70 ± 1.30	6.1	2.54	0.22	1.81	4.87 ± 0.08	2	1.43 ± 0.00
	3	291	25	8.80 ± 1.64	4.7	4.12	—	1.37	8.90 ± 1.33	3	1.00 ± 1.00
15th	1	743	78	16.43 ± 1.17	—	8.00	0.13	2.54	8.10 ± 1.00	—	1.70 ± 0.40
	2	300	34	8.73 ± 1.41	1.1	3.33	0.25	2.54	6.15 ± 1.14	1.5	3.08 ± 0.87
	3	367	27	1.80 ± 1.37	1.7	1.90	—	1.00	3.10 ± 0.80	4.3	4.40 ± 1.00
30th	1	613	68	10.08 ± 1.15	3.1	6.64	0.20	2.34	6.38 ± 1.11	4.0	0.74 ± 0.13
	2	337	37	10.38 ± 1.61	2.6	3.82	0.88	2.90	7.34 ± 1.00	2.5	3.08 ± 0.94
	3	383	43	11.22 ± 1.81	3.1	4.89	0.28	2.61	7.57 ± 1.25	2.6	3.64 ± 0.92
Control		1317	77	8.36 ± 0.84		2.28	0.15	0.84	3.34 ± 0.54		2.51 ± 0.34

* 1—350 r; 2—10 G + 350 r; 3—700 cps + 350 r

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ACC NR: AT60038/2

Table 6. Effect on the bone marrow cells of mice of combined exposure to x-ray irradiation followed by centrifugation or vibration 24 hours later

Dry killed after exposure	Action	Cells examined		Disruptions	n	Chromosomal re-arrangements				n	Ad-metaphase	Mitotic index
		All	No. of plates			Bridge-breaks	Translocations	Fragmentation	Re-arrangements			
3rd	1	420	90	21.43 ± 1.07	-	8.80	3.87	11.43	10.10 ± 1.81	-	1.43 ± 0.58	1.30
	2	420	82	19.80 ± 1.44	1.0	2.88	0.60	12.80	16.18 ± 1.70	1.0	1.58 ± 0.78	1.30
	3	307	77	10.40 ± 1.90	0.0	2.27	-	10.32	12.18 ± 1.81	2.0	1.40 ± 0.80	2.15
7th	1	620	121	19.81 ± 1.57	-	8.90	1.43	7.79	12.12 ± 1.51	-	1.41 ± 0.41	2.10
	2	330	40	13.28 ± 1.70	2.4	7.30	0.51	9.31	8.12 ± 1.46	1.0	1.61 ± 0.61	2.10
	3	310	48	14.83 ± 1.80	2.1	4.84	1.83	9.80	12.12 ± 1.70	1.0	1.63 ± 0.83	2.19
15th	1	718	78	10.43 ± 1.12	-	4.02	0.13	8.51	8.12 ± 1.06	-	1.78 ± 0.48	2.00
	2	337	27	10.16 ± 1.70	-	3.51	0.58	1.45	8.12 ± 1.62	-	1.10 ± 0.90	2.88
	3	313	43	12.44 ± 1.78	-	3.20	0.28	1.44	8.12 ± 1.32	-	1.30 ± 0.30	2.00
30th	1	678	82	10.43 ± 1.13	1.1	4.84	0.20	2.20	8.12 ± 1.11	1.0	0.74 ± 0.35	2.20
	2	337	27	8.38 ± 1.52	1.4	7.85	-	1.22	8.12 ± 1.52	1.1	-	2.90
	3	330	29	8.83 ± 1.51	1.6	8.10	0.30	0.30	7.04 ± 1.30	1.5	1.74 ± 0.68	2.20
Control		1317	77	5.40 ± 0.64	-	2.28	0.15	0.01	5.3 ± 0.51	-	2.54 ± 0.80	2.20

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n = 1-350 r; 2-350 r + 10G; 3-350 r + 700 cps

ACC NR: AT6003872

The changes in mitotic activity in bone marrow cell mitosis may reflect altered oxygen metabolism on the macro or cellular level or the effect of the physical factors tested on the sympathetic system and the secretion of adrenalin or noradrenalin. These two hormones tend to protect the organism from radiation but also depress mitotic activity. It is also possible that the physical factors themselves had a direct effect on the cellular mechanism. In general, however, it was felt that the various physiological changes occurring as a result of acceleration or vibration lead to disruptions of mitotic activity which may reflect a unique "protective" effect from radiation. Orig. art. has: 4 figures and 6 tables. (AD PERS: 4091-1/)

SUB CODE: 06 / SUBM DATE: none / ORIG REF: 006 / CMT REF: 009

Card 8/8

ARSEN'YIYA, M.A., kand.biolog.nauk

Two symposia on problems of genetics held in Czechoslovakia.
Vest. AN SSSR 35 no.12:83 D '65.

(MIRA 19:1)

82722

S/138/60/000/007/002/010
A051/A021

15.9210

AUTHORS: Vinogradov, P.A.; Arsen'yeva, N.O.; Gavashinova, K.Ye.

TITLE: The Interaction of Haloid-Organic Compounds With Butadiene-Nitrile Copolymers

PERIODICAL: Kauchuk i Resina, 1960, No. 7, pp. 3 - 6

TEXT: The interaction of haloid-organic compounds with butadiene-nitrile copolymers during the vulcanization of rubber mixtures and the properties of the resultant vulcanizates were studied. The experimental procedure is outlined, whereby the conditions adopted were similar to those described in Reference 3. The properties of the polymers and vulcanization were tested according to the GOST-7738-55 (0007 7738-55) standard on a butadiene-nitrile rubber base. According to experimental data obtained it was found that the vulcanizates of rubber mixtures on a CKH-26 (SKH-26) rubber base in the presence of various haloid derivatives (chloranil, benzotrichloride, benzylchloride, carbon tetrachloride) brings about significant changes in the vulcanizate properties (Table 1). The effect of chloranil on the properties of vulcanizates from various butadiene-nitrile copol-

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32722

3/138/60/000/007/002/010

AO51/A023

The Interaction of Haloid-Organic Compounds With Butadiene-Nitrile Copolymers

ymers is shown in Table 2 and Figure 1. It was found that the tensile strength and specific elongation of butadiene-nitrile rubber vulcanizates not containing haloid-organic compounds drop considerably after swelling in autol-18 or AMF-10 (AMG-10) liquid at a temperature of 200°C. Vulcanizates with polymers containing a small number of nitrile rings, such as CMH-10 (SKN-10) and CMH-18 (SKN-18), show a very noticeable drop of the tensile strength. This is not so apparent in SKN-26 and CMH-40 (SKN-40) rubbers. The introduction of 5 weight parts of chloranil has hardly any effect on the properties of the vulcanizates, but increases the tensile strength of the latter after swelling at 200°C in autol-18 and AMG-10 liquid; it also increases their swelling-resistance in these liquids. Chloranil was found to have a strengthening effect on all vulcanizates. The increase in the tensile strength of vulcanizates from SKN-18 rubber containing 5 weight parts of chloranil after swelling in autol-18 at 200°C was from 80 kg/cm² to 150 kg/cm²; for vulcanizates without chloranil and in AMG-10 liquid it was from 40 kg/cm² to 80 kg/cm². Figure 2 shows that with an increase in the chloranil content in SKN-18 vulcanizates after heating in autol-18 the thermal stability and swelling-resistance increase. The elasticity and frost-resistance coefficient do not change significantly. SKN-18 rubber, if sufficiently frost-resistant, or

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8/138/60/000/007/002/010

AC51/A029

The Interaction of Haloid-Organic Compounds With Butadiene-Nitrile Copolymers

rubbers containing a lesser number of acrylonitrile rings (e.g., SKN-10) with haloid-organic compounds (e.g., chloranil) introduced into them, can be used in the production of heat- and frost-resistant rubber articles. Figure 3 shows how benzotrichloride changes the properties of SKN-18 rubber vulcanizates. The main properties of vulcanizates from SKN-18 and SKN-10 rubbers and those of butadiene and 2-methyl-5-vinylpyridine copolymers containing 5 weight parts of chloranil were compared and it was seen that SKN-10 rubber vulcanizates are actually equivalent to vulcanizates from butadiene-methylvinylpyridine copolymers and are only inferior to the latter in their stability to the action of dibutyl sebacate at high temperatures. The possibility of introducing haloid-organic compounds into the butadiene-nitrile latex was established. In conclusion the authors state that the butadiene-nitrile copolymer vulcanizates with haloid-organic compounds can be recommended for the production of various gasoline-, oil- and heat-resistant rubbers, asbestos-commercial products or leather substitutes. There are 3 graphs, 2 tables and 7 references: 3 Soviet and 4 English.

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83847

8/138/60/000/003/002/007
A051/A029

15.9200 *also* 2209

AUTHORS: Vincogradov, P.A.; Arsen'yeva, N.G.; Gavashinova, K.Ye.

TITLE: Ternary Copolymers of Butadiene, Acrylonitrile and 2-Methyl-5-Vinyl Pyridine ↑

PERIODICAL: Kauchuk i Rezina, 1960, No. 3, pp 5 - 9

TEXT: The authors have synthesized the ternary copolymers of butadiene with 2-methyl-5-vinyl pyridine and butadiene with acrylonitrile and made a study on the effect of the presence of acrylonitrile rings in the copolymer on the properties of the latter. In Reference 6 it was pointed out that the ternary copolymers in question, containing halide-organic compounds, have a better resistance to the action of aromatic hydrocarbons than the binary copolymers. The experimental procedure followed by the authors is outlined in detail and the results presented in a graph of Figure 1. The obtained results show that the introduction of acrylonitrile rings into the molecular chain of the copolymers of butadiene and methyl-vinyl pyridine has a considerable effect on the properties of the copolymers (see Table 2). The elasticity of the vulcanized rubber is reduced. An obvious drop in the frost resistance is noted. The vitrification

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83047

3/138/60/000/003/002/007
A051/A029

Ternary Copolymers of Butadiene, Acrylonitrile and 2-Methyl-5-Vinyl Pyridine

temperature of CKM6N-15A (SKMVP-15A) rubber is -68°C , whereas for CKM6N-15-15A (SKMVP-15-15A) rubber it is -41°C . However, the nitrile rings do not effect the physico-mechanical properties of the vulcanized rubber. The properties of the rubber, subjected to the action of organic liquids at a high temperature are discussed. It is seen that the vulcanized rubber of the investigated copolymers in the presence of halide-organic compounds has a high resistance to swelling in organic liquids and a high thermal resistance. These copolymers surpass the butadiene and 2-methyl-5-vinyl pyridine copolymers in their resistance to swelling in organic liquids and their temperature resistance. It was also established that the investigated copolymers have a high thermal resistance in mineral oils. Table 3 gives the data on the similar relationship of the composition effect of the copolymers and that of the chloranil content to the swelling resistance of the vulcanized rubber at room temperature. The swelling is greater when the rubber does not contain chloranil. There are 3 tables, 1 figure and 7 references: 2 Soviet, 4 English and 1 German.

Card 2/2

SHITIKOV, V.P.; VINOGRADOV, P.A.; TARUSINA, M.S.; *Prinimali uchastiy:*
GAVSHINOVA, K.B.; ARSEN'TEVA, N.G.; GUDOK, V.V.; OVCHINNIKOV,
S.G.; MALKOVA, A.F.

Increasing the heat and wear resistance of engineering asbestos
friction materials. *Kauch.i rez.* 21 no.12:25-26 D '62.

(MIRA 16:1)

1. *Vsesoyuznyy nauchno-issledovatel'skiy institut asbesto-
tekhnicheskikh izdeliy, Yaroslavskiy zavod sinteticheskogo
kauchuka i Yaroslavskiy zavod asbesto-tekhnicheskikh izdeliy.*
(Rubber goods) (Asbestos)

AISEN'T'YEVA, N.G. (Moskva)

Two ways of generation of sentences in the Russian language.
Probl. kib. no.14:189-218 '65. (MIRA 19:1)

1. Submitted April 28, 1964.

ARSEN'YEVA, N.P., insh.; BYKOVA, S.P., insh.; GARBER, V.I., insh.

Relay-protection diagrams for operational alternating current. Elek.
sta. 28 no.12:76-78 D '57. (MIRA 12:3)
(Electric relays)

ARSEN'YEVA, Y.M.

Heat exchange and the formation of temperature gradients in small
lakes. Uch.sap.Len.un. no.199:159-194 '55. (MIRA 9:7)
(Hydrology) (Leningrad Province)

ARSEN'YEVA, N.P., inzh; RABINOVICH, B.Yu., inzh

Remote control by means of the RPY-52 automatic reclosure
equipment. Elek.sta. 29 no.9:81-82 8 '58. (MYRA 11:11)
(Electric substations) (Remote control)

ARSEN'YEVA, Nina Mikheylovna, assistant; DAVIDOV, Lev Konstantinovich, prof.; DUBROVINA, Lidiya Nikolayevna, dots.; KONKINA, Nina Georgiyevna, dots.; PETROVSKAYA, T.I., red.; ZHABKO, G.P., tekhn. red.

[Seiches on the lakes of the U.S.S.R.] Seisbi na ozerakh
SSSR. [By] N.M.Arsen'eva i dr. Leningrad, Izd-vo Leningr.
univ., 1963. 182 p. (MIRA 16:12)
(Seiches) (Lakes)

ARSEYKVA, N.V.; KITAYEV, B.I.

Combustion of hydrocarbon gas in a vertical column in a free
stream. Gaz. delo no.5s33-39 '64 (MIRA 1's7)

1. Ural'skiy politekhnicheskii institut.

ARSEN'YEVA, N.Yu.

Heat balance of the White Sea and its changes in time and space.
Trudy GOIN no.81:62-93 '64. (MIRA 17:11)

ARSEN'YEVA, N.Ya.

Variations in the thermal conditions of waters in the White Sea over
a period of many years. Trudy GOIN no.55:30-63 '60. (MIRA 14:7)
(White Sea—Ocean temperature)

ARSEN'YEVA, N.Ya.

Calculation of ice distribution in the sea as exemplified by the
White Sea. Trudy GOIN no.55:64-76 '60. (MIRA 14:7)
(White Sea--Sea ice)

TIMONOV, V.V.; ARSEN'YEVA, N.Ya.

Accuracy of calculating transverse fluctuations of water level
from observations on tidal currents. Trudy GOIN no. 57:67-
72 '60.
(Tides)
(MIRA 14:1)

ARSEN'YEVA, N.Ya.

Effect of tidal streams on climatic and hydrological conditions
in the sea. Trudy GOIN no.64:93-102 '61. (MIR: 14:8)
(White Sea—Meteorology, Maritime)
(Tides)

ARSEN'YEVA, N.Ya.

Calculated evaporation from the sea surface, as compared with
instrumental measurements. Trudy GOIN no.70:34-38 '62.
(MIRA 1966)

(Evaporation) (Meteorology, Maritime)

AL. EN. MIRA, . . .

Method of calculating the water temperature of the active layer
of the White Sea. Trudy GOIN no.86:75-94 '65. (MIRA 18:9)

KHITROV, N.I.; SLUTSKIY, A.B.; ARSEN'YEVA, R.V.

Synthesis and characteristics of coesite, the stable modification
of silica at high pressures [with summary in English]. Geokhimiya
no.8:666-672 '57. (MIRA 11:2)

1. Institut geokhimii i analiticheskoy khimii im. V.I. Vernadskogo
AN SSSR, Moskva.

(Silica) (Coesite)

AUTHORS: Khitarov, N. I., Lebedev, Ye. B., Rengarten, Ye. V.,
Arsen'yeva, R. V. SOV/7-59-5-1/14

TITLE: Comparative Characterization of the Solubility of Water in
Basaltic and Granitic Melts (Sравnitel'naya kharakteristika
rastvorimosti vody v bazal'tovom i granitnom rasplavakh)

PERIODICAL: Geokhimiya, 1959, Nr 3, pp 387 - 396 (USSR)

ABSTRACT: The laboratory assistants P. V. Boytsov and E. Ye. Filippova
took part in the experiments. An apparatus which had been
worked out by B. A. Korndorf and N. I. Khitarov was used. This
apparatus is described in short (Figs 1 and 2). Pressures of
1000, 2000 and 3000 kg/cm² and temperatures of 900 and 1000°
were used for the investigation. The samples were heated first
up to 105°, then up to 1200° in order to determine water; the
weighed portion amounted to 200-370 mg, the weighing out of the
Pregel tube was carried out on the microbalance ADV-200. The
sample material was pulverized rock, i.e. basalt of the side
crater Kirgariich of the Klyuchevskiy volcano from the eruption
in 1932, put at the authors' disposal by V. I. Vlo-
davtsev. Laboratoriya vulkanologii Akademii nauk SSSR (Labora-
tory of Volcanology of the Academy of Sciences, USSR); further-

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Comparative Characterization of the Solubility of
Water in Basaltic and Granitic Melts

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more El'dzhurtinskiy granite, a porphyritic biotite granite of the northern Caucasus. The rocks were investigated under the microscope, the chemical composition is given (Table 1). A total of almost 30 determinations were carried out. A series with basalt was investigated 2 1/2 hours at 900° and 3000 kg/cm²; the chilled melts contained an average of 3.3% water. The samples of the second series were heated 1 hour up to 1000°, then 2 1/2 hours up to 900°, the pressure amounted again up to 3000 kg/cm². The basalt of these samples contained an average of 3.6%, granite 6.7% water (Table 2). Further investigations were carried out under different conditions (Table 3). The basalt melt contains 5.4% water at 1000° and 3000 kg/cm², the granite melt 5.7% water. It is possible that the water content does not depend on the chemical composition at higher temperatures (Fig 9). A comparison with the values of Goranson (Refs 1 and 2) in figure 5 shows that the values of Goranson are higher by approximately one half. The values of the authors are probably more realistic, as confirmed by the curve of Johns and Burnham (Ref 4). The chilled melts were investigated under the

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Comparative Characterization of the Solubility of
Water in Basaltic and Granitic Melts

807/7-59-5-1/14

microscope; granite was transformed into light-grey glass with cracks and a small quantity of hematite (Fig 6), basalt into glass and hornblende with a small quantity of magnetite (Fig 7). Pyroxene insets were almost not changed at all, the olivines had a hornblende seam (Fig 8). Since hornblende usually does not occur in basalt, as well as in diabases and dolerites, it is assumed that the basaltic magmas have only low water content. Furthermore it is assumed that basaltic magma consists at 900° and 3000 kg/cm² of a comparatively easily mobile melt and olivine- and pyroxene insets. There are 9 figures, 3 tables, and 10 references, 3 of which are Soviet.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo AN SSSR, Moskva (Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy AS USSR, Moscow)

SUBMITTED: April 15, 1959

Card 3/3

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SESSION NR: W5010602

record respiration and pulse. At the same time, gas content registered the volume of lung ventilation. All these indices were recorded following exposure to decompression from pressures of 4.0 atm (at pressure 5-16 min), or to intravenous injection of air in quantities of 20-40 ml in the course of 1-2 min. Fig. 1 shows the system used to inject air into the experimental dogs.

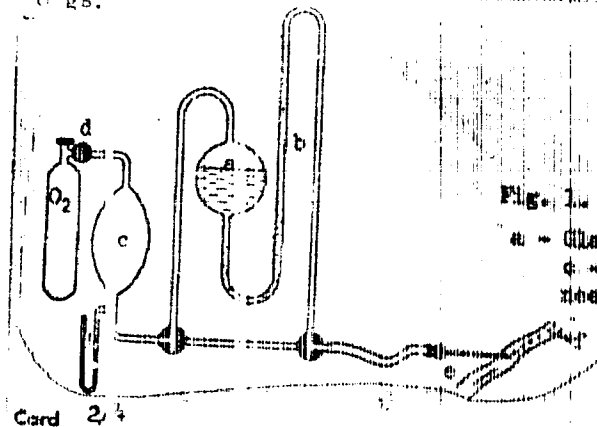


Fig. 1. System for intravenous air injection
a - Glass sphere; b - graduated burette;
c - ISAM-AB; d - reducing; e - injection
needle; f - vein.